



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,372	09/25/2001	Hideto Furuyama	214398US2SRD	5911

22850 7590 04/09/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ALLEN, DENISE S

ART UNIT PAPER NUMBER

2872

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/961,372

Applicant(s)

FURUYAMA, HIDETO

Examiner

Denise S Allen

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 3-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species 1 (claims 1, 2, and 25 – 28) in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the Election of Species Requirement fails to set forth a serious burden in terms of searching and examining all claims together. This is not found persuasive because these inventions are distinct for the reasons given in the Office Action on February 21, 2003 (paper #5) and have acquired a separate status in the art as shown by their different classification: Species 1 classified in class 385 subclass 31, Species 2 classified in class 385 subclass 48, and Species 3 classified in class 385 subclass 50.

The requirement is still deemed proper and is therefore made FINAL.

Claims 3 – 24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in Paper No. 7.

Drawings

✓ Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

✓ The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference 31 (page 38 line 3).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Figure 4 reference n3, ✓
✓ Figure 10B reference 3D, and Figure 12 reference 12. ✓

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

✓ Claims 26 and 28 are objected to because of the following informalities: the limitation "the optical unit" (claims 26 and 28 line 10) lacks antecedent basis because it has not been previously recited in claims 25 – 28. Suggested correction: replace the limitation "the optical unit" with "an optical unit". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuo et al (US 5,446,814).

Regarding claim 1, Kuo et al teaches an optical interconnection circuit board (Figure 1 reference 101) for guiding an optical signal (references 160, 161, and 162), comprising: a substrate (reference 104) having a surface (reference 123); a first clad layer (reference 111) having a flat surface (reference 112), which is formed on the surface of the substrate; a core layer (reference 113) configured to guide the optical signal in a predetermined direction, formed on the flat surface of the first clad layer and extended in the predetermined direction; a second clad layer (reference 126) formed on the core layer; and a first mirror segment (reference 118) having a first mirror face (reference 120) configured to reflect the optical signal guided in the core layer (reference 161) through the second clad layer to the outside thereof (reference 162), the first mirror segment being formed on the flat surface of the first clad layer and the mirror face being contacted to the core layer.

Regarding claim 2, Kuo et al teaches a second mirror segment (reference 117) having a second mirror face (reference 119) configured to reflect the optical signal into the core layer (reference 161), the optical signal being incident on the second mirror face from the outside of the circuit board through the second clad layer (reference 160), the second mirror segment being formed on the flat surface of the first clad layer and the mirror face being contacted to the core layer.

Claims 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Bhagavatula (US 6,259,841 B1).

Regarding claim 25, Bhagavatula teaches a method of manufacturing an optical interconnection circuit board for guiding an optical signal (Figures 6A – 6D), comprising: preparing a substrate having a surface; forming a first clad layer having a flat surface (bottom

layer in Figures 6A – 6D), on the surface of the substrate; forming a mirror layer on the first clad layer (Figure 6B reference 92); etching the mirror layer to form a mirror segment having a reflection face thereon and having a first height (Figure 6C reference 98); forming a core segment on the first clad layer (layer even with reference 95), the core segment having a second height not greater than the first height and being so extended as to have a predetermined optical circuit pattern; and covering the core segment with a second clad layer (top layer).

Regarding claim 26, Bhagavatula teaches forming a shield layer on the second clad layer (column 7 lines 52 – 54); forming a cover layer on the shield layer (Figure 2 reference 50), the cover layer having a coupling hole configured to allow the optical signal to pass there through; and etching the shield layer under the coupling hole of the cover layer to form a coupling portion configured to align the optical interconnection circuit board with the optical unit (references 14a – 14e).

Claim 27 is rejected under 35 U.S.C. 102(e) as being anticipated by Bazylenko et al (US 6,154,582).

Bazylenko et al teaches a method of manufacturing an optical interconnection circuit board for guiding an optical signal (Figures 5 and 6a – 6h), comprising preparing a substrate (reference 8) having a surface; forming a first clad layer having a flat surface (reference 13), on the surface of the substrate; forming a mask layer on the first clad layer (reference 22), the mask layer having a opening region (reference 23); depositing a mirror layer (reference 24) on the first clad layer under the opening region of the mask layer to form a mirror (reference 15) on the first clad layer, the mirror having a reflection face thereon and having a first height; forming a core segment (reference 14) on the first clad layer, the core segment having a second height not

Art Unit: 2872

greater than the first height and being so extended as to have a predetermined optical circuit pattern; and covering the core segment with a second clad layer (reference 16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko et al in view of Bhagavatula.

Bazylenko et al teaches a method of manufacturing an optical interconnection circuit board as described above. Bazylenko et al does not teach forming a shield layer on the second clad layer; forming a cover layer on the shield layer, the cover layer having a coupling hole configured to allow the optical signal to pass there through; and etching the shield layer under the coupling hole of the cover layer to form a coupling portion configured to align the optical interconnection circuit board with the optical unit.

Bhagavatula teaches forming a shield layer and a cover layer as described above. It would have been obvious to one of ordinary skill in the art at the time of the invention to form the shield layer and the cover layer by the method of Bhagavatula on the optical interconnection circuit board of Bazylenko et al in order to provide coupling between an optical unit and the optical interconnection circuit.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise S Allen whose telephone number is (703) 305-7407. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

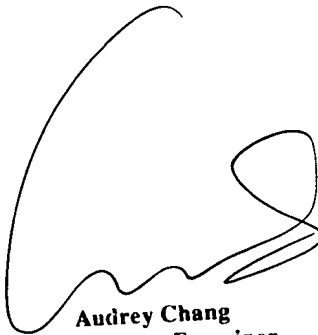
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.


dsa

April 6, 2003

Denise S Allen
Examiner
Art Unit 2872



Audrey Chang
Primary Examiner
Technology Center 2800